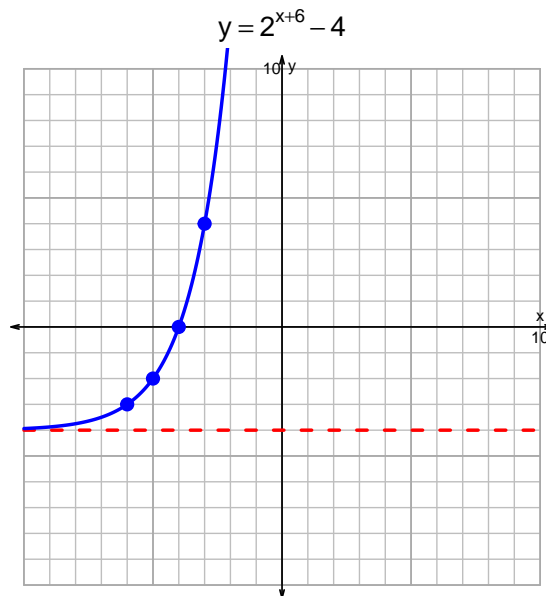
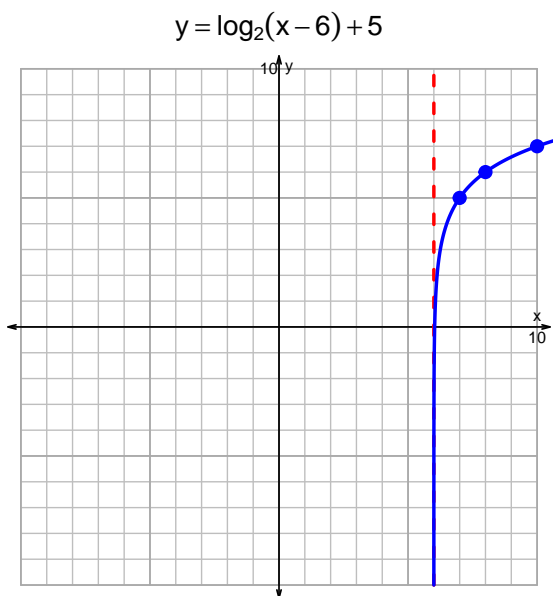


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v209)

1. Graph $y = \log_2(x - 6) + 5$ and $y = 2^{x+6} - 4$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-29 = \left(\frac{-5}{3}\right) \cdot 10^{7t/4}$$

Divide both sides by $\frac{-5}{3}$.

$$\frac{29 \cdot 3}{5} = 10^{7t/4}$$

Take log, base 10, of both sides.

$$\log_{10} \left(\frac{29 \cdot 3}{5} \right) = \frac{7t}{4}$$

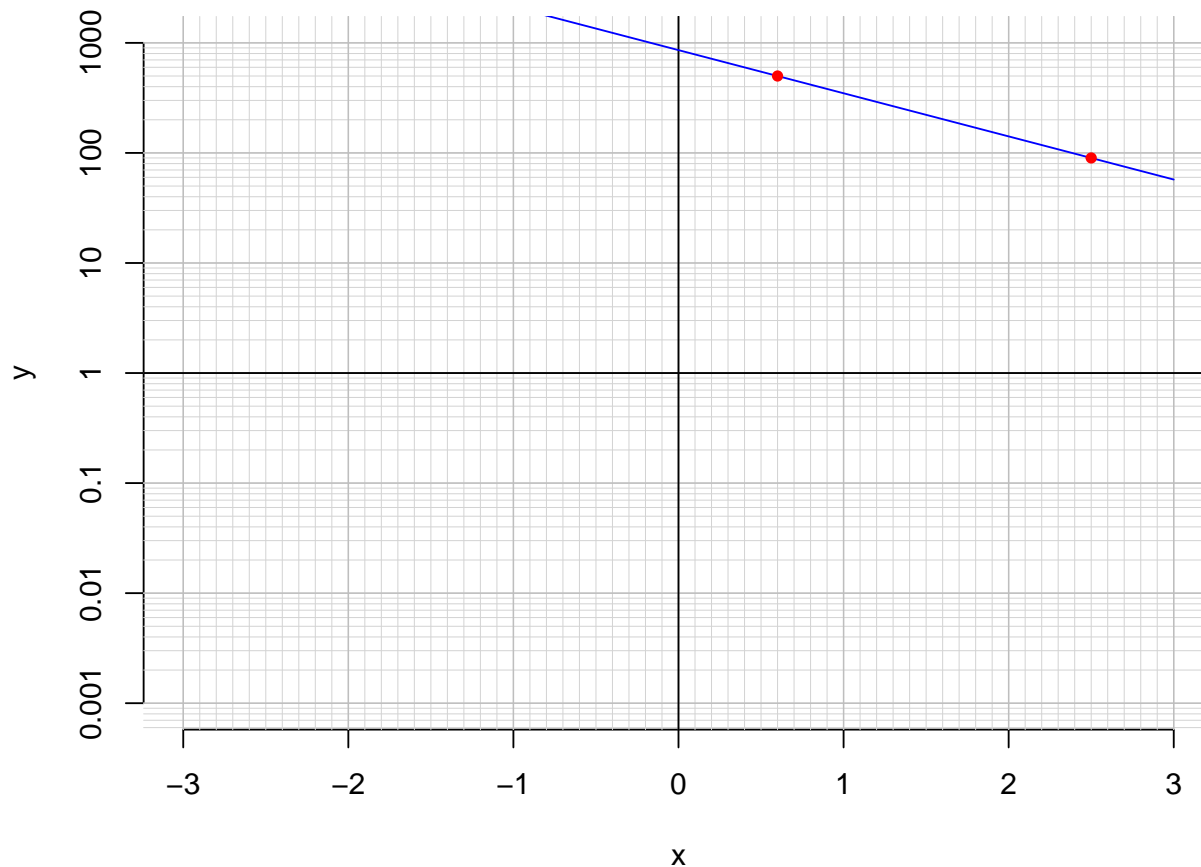
Divide both sides by $\frac{7}{4}$.

$$\frac{4}{7} \cdot \log_{10} \left(\frac{29 \cdot 3}{5} \right) = t$$

Switch sides.

$$t = \frac{4}{7} \cdot \log_{10} \left(\frac{29 \cdot 3}{5} \right)$$

3. An exponential function $f(x) = 859 \cdot e^{-0.903x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(0.6)$.

$$f(0.6) = 500$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{-1}{0.903} \cdot \ln\left(\frac{x}{859}\right)$$

- c. Using the plot above, evaluate $f^{-1}(90)$.

$$f^{-1}(90) = 2.5$$